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09/560,563	04/28/2000	Takahiro Nagai	2000 0557A	4051

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Washington, DC 20006

EXAMINER

NGUYEN, MINH DIEU T

ART UNIT	PAPER NUMBER
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2137

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DATE MAILED: 02/26/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/560,563

Applicant(s)

NAGAI ET AL.

Examiner

Minh Dieu Nguyen

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12, 14-27, 32-37, 46-58 and 60-73 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 53-57 and 60-69 is/are allowed.
- 6) ☒ Claim(s) 1-12, 14-27, 32-37, 46-52, 58 and 70-73 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. ____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 4.6.7.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

1. Claims 1-12, 14-27, 32-37, 46-58 and 60-73 are elected by applicant for examining. Claims 13, 28-31, 38-39, 59 and 74-95 are being withdrawn as being directed to a non-elected invention.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. **Claims 1, 4-8, 14-19, 32-33 and 70** are rejected under 35 U.S.C. 102(e) as being anticipated by Osawa et al., (6,516,064).

a) **As to claim 1**, Osawa discloses a signal recording apparatus, a signal record medium and a signal reproducing apparatus for prohibiting copying or unauthorized copying. The system includes:

i) a data recording and reproducing area for recording data therein and reproducing data therefrom (col. 2, lines 9-17; lines 23-29)

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ii) a read-only disk identification information area for recording disk identification information for identifying the optical disk therein [i.e. the key information may use, at least in a portion thereof, the identification information, such as identification information proper to a particular recording apparatus (col. 4, lines 27-38)].

b) **As to claim 4**, Osawa discloses the optical disk wherein the data recording and reproducing area includes an area for recording therein encrypted data, which is encrypted using information including the disk identification information for identifying the optical disk as a key (Figure 1; col. 4, lines 20-38).

c) **As to claim 5**, Osawa discloses the optical disk wherein the encrypted data includes content data which is at least one of image data and music data (col. 3, lines 50-53).

d) **As to claims 6 and 15**, Osawa discloses the optical disk wherein the encrypted data includes a descramble key for decrypting a cipher which has been performed on content data (col. 11, lines 10-16; Figure 22).

e) **As to claims 7 and 16**, Osawa discloses the optical disk wherein the encrypted data includes:

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i) This part of the claim has limitations that is similar to those of claim 6, thus it is rejected with the same rationale applied against claim 6 above.

ii) an error detection code for detecting an error in the descramble key (col. 17, lines 9-33).

f) **As to claims 14, 17, 32 and 33**, Osawa discloses the optical disk

i) wherein the optical disk includes an area for recording a disk identification information area for identifying the optical disk (Figure 1, element 23; col. 4, lines 27-38; col. 4, line 59 – col. 5, line 9).

ii) wherein the optical disk recording apparatus comprises:

- reproducing means for reproducing the disk identification information from the disk identification information area (Figure 16)
- recording means (claims 14 and 32) for recording at least partially encrypted data on the optical disk using the reproduced disk identification information as a key (col. 4, lines 20-38)
- decrypting means (claims 17 and 33) for decrypting at least partially encrypted data using the reproduced disk identification information as a key after reproducing the at least partially encrypted data from the optical disk (Figure 16 and 17; col. 11, lines 11-28).

g) **As to claim 18**, Osawa discloses the optical disk reproducing apparatus wherein the data to be decrypted includes a descramble key for decrypting a cipher which has been performed on the content data (Figure 16, 17 and 22; col. 11, lines 14-16).

h) **As to claim 19**, Osawa discloses the optical disk reproducing apparatus

i) wherein the data to be decrypted includes a descramble key for decrypting a cipher which has been performed on the content data (Figure 16, 17 and 22; col. 11, lines 14-16) and an error detection code for detecting an error in the descramble key (Figure 21 and 25).

ii) wherein the decrypting means detects an error included in the descramble key based on the error detection code (col. 15, lines 45-65).

i) **As to claim 70**, Osawa discloses an optical disk of read-only type for reproducing recoded data, including:

i) This part of the claim has limitations that is similar to those of claim 1 part i, thus it is rejected with the same rationale applied against claim 1 above.

ii) This part of the claim has limitations that is similar to those of claim 1 part ii, thus it is rejected with the same rationale applied against claim 1 above.

iii) This part of the claim has limitations that is similar to those of claim 4, thus it is rejected with the same rationale applied against claim 4 above.

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4. **Claims 1 and 3** are rejected under 35 U.S.C. 102(e) as being anticipated by Oshima et al., (5,761,301).

a) **As to claim 3**, Oshima discloses the disk identification information including an inherent disk identifier for each optical disk (col. 3, lines 39-43).

5. **Claims 8-11, 20-27, 34-37, 46-48, 51-52 and 71-73** are rejected under 35 U.S.C. 102(e) as being anticipated by Ueda et al., (6,289,102).

a) **As to claims 8 and 71**, Ueda discloses an optical disk

i) wherein the optical disk includes a data recording and reproducing area for recording data therein and reproducing data therefrom (col. 1, lines 10-15).

ii) wherein the data recording and reproducing area includes an area for recording therein, content data which is at least one of encrypted image data and encrypted music data, and a descramble key for decrypting a cipher which has been performed on the content data (col. 1, line 13; Figure 13, portion e; col. 18, lines 40-42).

b) **As to claim 9**, Ueda discloses that the content data and the descramble key are recorded in the same sector [i.e. the content data and the scramble information are recorded (Figure 1), the reproducing device interprets the scramble information and performs descramble processing to the user data in accordance with the scramble information (col. 11, lines 35-43)]. (Figure 11, portion e; col. 15, lines 41-43).

c) **As to claims 10 and 21**, Ueda discloses that the content data and the descramble key are recorded in sectors different from each other (Figure 11, portion e; col. 15, lines 41-43).

d) **As to claims 11 and 22**, Ueda discloses the optical disk wherein a pointer for pointing an area for recording the descramble key therein is recorded in the sector in which the content data is recorded (Figure 11, portion d).

e) **As to claims 20 and 34**, Ueda discloses an optical disk recording apparatus for recording content data comprising

i) recording means for recording on the optical disk, encrypted content data and a descramble key for decrypting a cipher which has been performed on the content data (col. 1, line 13; Figure 13, portion e; col. 18, lines 40-42).

f) **As to claims 23 and 35**, Ueda discloses an optical disk reproducing apparatus for reproducing content data comprising

i) reproducing means for reproducing encrypted content data and a descramble key for decrypting a cipher which has been performed on the content data from the optical disk (Figure 13; col. 22, lines 45-63).

g) **As to claim 24**, Ueda discloses the optical disk wherein the reproducing means reproduces the encrypted content data from a first sector of the optical disk, and

reproduces the descramble key from a second sector of the optical disk different from the first sector (Figures 20 and 21, col. 28, line 57 – col. 29, line 2).

h) **As to claim 25**, Ueda discloses the optical disk wherein the reproducing means reproduces a pointer for pointing an area of the second sector from which the descramble key is reproduced, from the first sector in which the encrypted content data is recorded (Figures 20 and 21, col. 29, lines 2-17).

i) **As to claims 26-27 and 36-37**, Ueda discloses an optical disk recording apparatus for allocating and recording information about a descrambled key required for encrypting data content into a key management information area of an optical disk of recording type comprising:

i) acquiring means for acquiring information about the descramble key required for content data to be recorded (claims 26 and 36) (Figure 13, portion 2) and acquiring information about a descramble key required for reproducing content data (Figures 22 and 23).

ii) allocating/recording means for reproducing information about the descramble key which is recorded in the key management information area (Figures 22 and 23).

j) **As to claims 46 and 73**, Ueda discloses an optical disk of recording type

i) wherein the optical disk has a sector structure comprising a plurality of sectors (Figure 1)

ii) wherein each of the sectors includes a sector header area and a main data area for recording encrypted data therein (Figure 11 portion e)

iii) wherein the sector header area includes a decipher key information area for recording therein at least one decipher key required for decrypting the encrypted data (Figure 11 portion e)

iv) wherein a size of the decipher key information area is smaller than that of each decipher key (Figure 1).

k) **As to claim 47**, Ueda discloses the optical disk

i) wherein each decipher key is divided into a plurality of divided decipher keys having a predetermined size (Figure 11 portions d and e)

ii) wherein the plurality of divided decipher keys are recorded in respective decipher key information areas of a plurality of continuous sectors (Figure 11 portions d and e).

l) **As to claim 48**, Ueda discloses the optical disk wherein the number of the divided decipher keys is a measure of the number of the sectors which are included in error correction code blocks and which are a plurality of sectors required for error correction (Figure 1 and Figure 11 portions d and e).

m) **As to claim 51**, Ueda discloses the optical disk wherein decipher key table is recorded over a plurality of different error correction code blocks (Figure 1 and Figure 11 portions d and e).

n) **As to claim 52**, Ueda discloses the optical disk wherein the respective decipher keys are managed and recorded in at least one unit of a file unit managed in a file management area, and an extent unit comprising a plurality of continuous sectors on the optical disk (Figure 11 portions a, b and c).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. **Claim 2** is rejected under 35 U.S.C. 103(a) as being unpatentable over Osawa et al., (6,516,064) in view of Fite et al., (5,513,169).

Osawa discloses the identification information is written in a location on the record medium by using bar codes, wobbling or ultraviolet rays (col.4, lines 62-64), but fails to disclose it is formed by removing a reflection film formed on the optical disk in a strip shape.

Fite discloses a machine readable code pattern is formed by applying a reflective coating to the information recording area, and removing the reflective coating from selected portions of the information recording area (col. 2, col. 12-15).

It would have been obvious to one of ordinary skill in the art at the time of the invention to employ the use of forming the identification number on optical disk, as Fite teaches, in the system of Osawa so as to obtain substantially unique identification number being formed on the disk after mastering and at a relatively low cost.

8. **Claims 12, 49-50, 58 and 72** are rejected under 35 U.S.C. 103(a) as being unpatentable over Ueda et al., (6,289,102) in view of Osawa et al., (6,516,064).

a) **As to claims 12 and 72**, Ueda discloses the optical disk including:

i) a data recording and reproducing area for recording therein and reproducing therefrom, content data including at least one of encrypted image data and encrypted music data (col. 1, line 13; Figure 13, portion e).

ii) a key management information area for recording therein, key information used when reproducing the content data, and a descramble key which is encrypted [i.e the encrypted title key field is recorded a key for descrambling, this field is subjected to encrypt using the encrypted disk key (Figure 13, portions d and e; col. 18, lines 40-54)].

However, Ueda fails to disclose the optical disk includes a read-only disk identification information for identifying the optical disk and a descramble key is encrypted using the disk identification information as a key.

Osawa discloses a read-only disk identification information area for recording disk identification information for identifying the optical disk therein [i.e. the key information may use, at least in a portion thereof, the identification information, such as identification information proper to a particular recording apparatus (col. 4, lines 27-38)].

It would have been obvious to one of ordinary skill in the art at the time of the invention to employ the use of disk identification information in identifying the optical disk and as an encrypted key, as Osawa teaches, in the system of Ueda so as to prevent illegal copy by recording a unique disk ID information into each optical disk.

b) **As to claim 49**, Ueda fails to disclose the optical disk wherein the respective decipher keys are recorded in a decipher key table having a plurality of decipher keys and wherein indexes for indicating recorded positions of the decipher keys required for decrypting the encrypted data within the decipher key table are recorded in the decipher key information areas of the sectors.

Osawa discloses key information is taken out corresponding to the key storage site information, these keys are associated with the decoders for performing decoding (Figure 18).

It would have been obvious to one of ordinary skill in the art at the time of the invention to employ the use of recording decipher keys in a table and indexes for indicating recorded positions of the decipher keys, as Osawa teaches, in the system of Ueda so as to efficiently organize data.

c) **As to claim 50**, Ueda fails to disclose the optical wherein decipher key status areas for recording decipher key statuses on the respective decipher key areas of the decipher key table are recorded as information for representing a recorded status of the decipher key table.

Osawa discloses a key storage site information including the attribute information of the decoders (col. 11, lines 44-55).

It would have been obvious to one of ordinary skill in the art at the time of the invention to employ the use of recording decipher key statuses, as Osawa teaches, in the system of Ueda so as to efficiently track data.

d) **As to claim 58**, Ueda discloses an optical disk reproducing method, however he fails to disclose using a decipher key index to acquire a decipher key as followed steps:

i) reproducing and acquiring a decipher key index from a data recording area in which data to be reproduced is recorded in a file unit or an extent unit

ii) reproducing and acquiring a decipher key corresponding to the acquired decipher key index

iii) reproducing data in the file unit or the extent unit which is encrypted using the decipher key (col. 29, lines 2-17).

Osawa discloses a decoding process in the reproducing apparatus using the key storage site information (col. 11, line 60 – col. 12, lines 22).

It would have been obvious to one of ordinary skill in the art at the time of the invention to employ the use of recording decipher keys in a table and indexes for indicating recorded positions of the decipher keys, as Osawa teaches, in the system of Ueda so as to efficiently organize data.

Allowable Subject Matter

9. **Claim 50** is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

10. **Claims 53, 57, 60-62, 65 and 68-69** are allowed.

a) As to claims 53, 62, 65 and 68-69, the prior arts, Osawa et al., (6,516,064), Oshima et al., (5,761,301), Fite et al., (5,513,169) and Ueda et al., (6,289,102) show a similar system, however they fail to teach the step of recording in a non-encrypted status data including decipher key conversion data used for conversion of a decipher key for decrypting data in the non-encrypted area, and recording encrypted data in the encrypted area using the decipher key which is converted using the decipher key conversion data.

This distinct feature has been added to the independent claims and renders them allowable. Claims 54-56, 63-64 and 66-67 are allowed because of the combination of additional limitations and the limitations listed above.

b) As to claims 57 and 60-61, the prior arts, Osawa et al., (6,516,064), Oshima et al., (5,761,301), Fite et al., (5,513,169) and Ueda et al., (6,289,102) show a similar system, however they fail to teach the step of recording a decipher key status table for indicating a recorded status of the decipher key on the optical disk, reading out a decipher key status, judging whether or not there is an empty area for a decipher key based on the read-out decipher key status, reserving a decipher key area and recoding the decipher key in the decipher key area, when judging that there is the empty area for the decipher key and reproducing the decipher key status table from the optical disk.

This distinct feature has been added to the independent claims and renders them allowable.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure

a) Information Reproducing Method and Apparatus Having Protect Function and Recording Medium Used in Apparatus, Aizawa, US Patent 5,646,993.

b) Signal Transmission Method, Sako et al., US Patent 6,546,490.

c) Recording Apparatus, Recording Medium, Playback Apparatus, Recording Method and Playback Method, Inazawa et al., US Patent 6,587,948.

d) Recording Medium for Electronic Publications Including Multiple Format Emulation, Nakahara et al., US Patent 5,752,009.

e) Mark Forming Apparatus, Method of Forming Laser Mark on Optical Disk, Reproducing Apparatus, Optical Disk and Method of Producing Optical Disk, Oshima et al., US Patent 5,761,301.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Minh Dieu Nguyen whose telephone number is 703-305-9727. The examiner can normally be reached on M-F 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Greg Morse can be reached on 703-308-4789.

The fax phone numbers for the organization where this application or proceeding is assigned are:

703-746-7238	for After-Final communications
703-872-9306	for Official communications
703-746-5661	for Non-Official/Draft communications

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.



GREGORY MORSE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100

Minh Dieu Nguyen

hmn

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Examiner
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